



## Physics

Time Remaining: 45/45 (Minutes)

Q.1

Test 1 Motion and Force

Physics Unit Wise

**The distance travelled by a body is proportional to the square of time. The body is moving with**

- A) Uniform Acceleration  
B) Variable acceleration  
C) uniform velocity  
D) all of the above

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

- ☐ A ☐ B ☐ C ☐ D

Next

# Physics

Time Remaining: 44/45 (Minutes)

Q.2

Test 1 Motion and Force

Physics Unit Wise

**Inertia of a body has direct dependence on**

A) velocity

B) volume

C) mass

D) density

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back

# Physics

Time Remaining: 44/45 (Minutes)

Q.3

Test 1 Motion and Force

Physics Unit Wise

**A man is at rest in the middle of a pond on perfectly smooth ice. He can get himself to the shore by making use of Newton's**

A) first law

B) second law

C) third law

D) all the laws

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back



## Physics

Time Remaining: 44/45 (Minutes)

Q.4

Test 1 Motion and Force

Physics Unit Wise

Two balls projected at  $30^\circ$  and  $60^\circ$  with same initial velocities. The ratio of their maximum heights is

A) 1:2

B) 1:4

C) 1:3

D)  $1:\sqrt{2}$ 

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back



## Physics

Time Remaining: 44/45 (Minutes)

Q.5

Test 1 Motion and Force

Physics Unit Wise

**A graph is drawn with force along Y-axis and time along X-axis. The area under the graph represents**

- A) Momentum  
B) Couple

- C) Moment of the force  
D) Impulse of the force

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

- ☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 44/45 (Minutes)

Q.6

Test 1 Motion and Force

Physics Unit Wise

**At which point for a projectile its kinetic energy is completely converted into potential energy**

- A) at point of projection
- B) at the highest point
- C) point to hit the ground
- D) not possible

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 44/45 (Minutes)

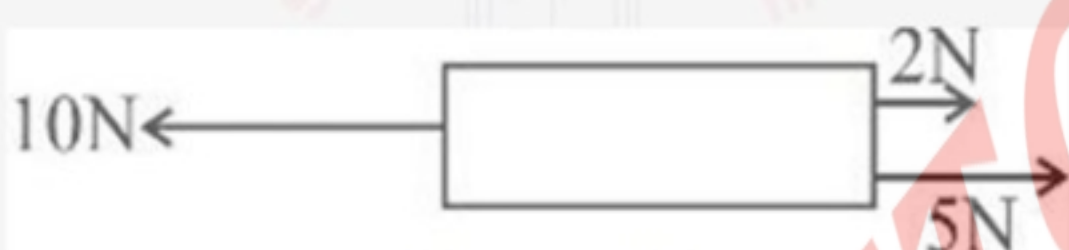
Q.7

Test 1 Motion and Force

Physics Unit Wise

What is the resultant force shown in fig?

- A) 7 N towards      C) 3N toward left  
B) 17N in arbitrary direction      D) 10N towards left



STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

- ☒ A    ☐ B    ☐ C    ☐ D

Next

Back





Time Remaining: 43/45 (Minutes)

Q.8

Test 1 Motion and Force

Physics Unit Wise

Q. 8

A 7.0 kg bowling ball experiences a net force of 5.0 N what will be its

acceleration?

A)  $7.1 \text{ ms}^{-2}$

B)  $0.71 \text{ ms}^{-2}$

C)  $5.0 \text{ ms}^{-2}$

D)  $35.0 \text{ ms}^{-2}$

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:



A



B



C



D

Next

Back



Time Remaining: 43/45 (Minutes)

Q.9

Test 1 Motion and Force

Physics Unit Wise

Two projectiles are fired at different angles with the same magnitude of velocity such that they have the same range. At what angles they might have been projected?

- A)  $35^\circ$  and  $75^\circ$       B)  $25^\circ$  and  $65^\circ$   
C)  $10^\circ$  and  $50^\circ$       D) None of the above

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

- ☒ A    ☐ B    ☐ C    ☐ D

Next

Back



Time Remaining: 43/45 (Minutes)

Q.10

Test 1 Motion and Force

Physics Unit Wise

A train takes 1 hour to go from one station to the other. It travels at a speed of  $30 \text{ kmh}^{-1}$  for first half hour and at a speed of  $50 \text{ kmh}^{-1}$  for the next half hour. The average speed of the train is:

A)  $45 \text{ kmh}^{-1}$

B)  $35 \text{ kmh}^{-1}$

C)  $40 \text{ kmh}^{-1}$

D)  $30 \text{ kmh}^{-1}$

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back





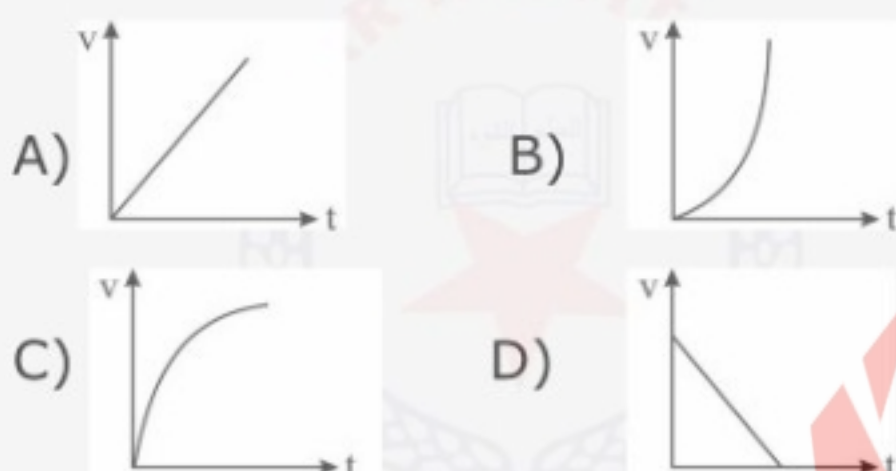
Time Remaining: 43/45 (Minutes)

Q.11

Test 1 Motion and Force

Physics Unit Wise

An object is dropped from rest. Its v-t graph is



STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 43/45 (Minutes)

Q.12

Test 1 Motion and Force

Physics Unit Wise

If a projectile is thrown with  $19.6\text{m/s}$  velocity at  $30^\circ$  with x-axis, time taken to reach highest point?

A) 1 sec

B) 2 sec

C) 3 sec

D) 4 sec

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back



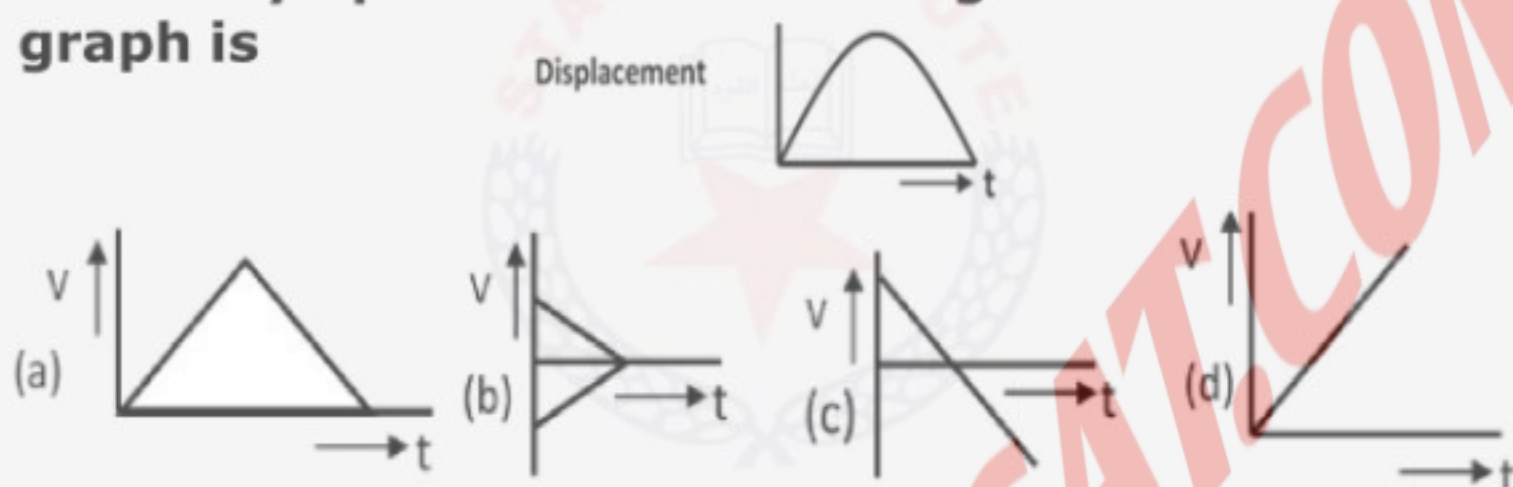
Time Remaining: 43/45 (Minutes)

Q.13

Test 1 Motion and Force

Physics Unit Wise

Displacement time graph of a ball thrown vertically upward is shown in figure then its v-t graph is



STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



## Physics

Time Remaining: 43/45 (Minutes)

Q.14

Test 1 Motion and Force

Physics Unit Wise

**The distance travelled is given by**

- A) Area under speed-time graph
- B) Slope of velocity-time graph
- C) Area under distance-time graph
- D) Slope of distance-time graph

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back

# Physics

Time Remaining: 43/45 (Minutes)

Q.15

Test 1 Motion and Force

Physics Unit Wise

**If a body starts from a point, and returns back to the same point, then its**

- A. Average velocity is zero but not average speed
- B. Both average velocity and average speed are not zero
- C. Average speed is zero but not average velocity
- D. Both average speed and average velocity are zero

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 42/45 (Minutes)

Q.16

Test 1 Motion and Force

Physics Unit Wise

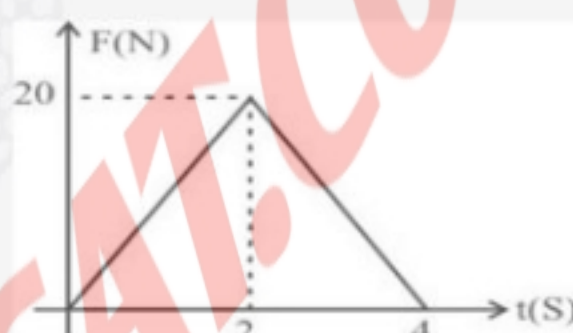
The variation of force acting on a body with time is shown. What is the change in momentum of body after 4s?

A) 10Ns

B) 20Ns

C) 40Ns

D) 80Ns



STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back





Time Remaining: 42/45 (Minutes)

Q.17

Test 1 Motion and Force

Physics Unit Wise

**Velocity and acceleration are in the same direction when**

- A) Velocity of a car is increasing on a straight road
- B) Velocity of a car is decreasing on a straight road
- C) Car is turning round a corner
- D) None of these

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 42/45 (Minutes)

Q.18

Test 1 Motion and Force

Physics Unit Wise

**When the average velocity of a moving body is equal to its instantaneous velocity then it is moving with**

- A. Uniform velocity      C. Uniform acceleration  
B. Variable velocity      D. Variable acceleration

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

☒ A    ☐ B    ☐ C    ☐ D

Next

Back



Time Remaining: 42/45 (Minutes)

Q.19

Test 1 Motion and Force

Physics Unit Wise

How far does a car travel in 6 s if its initial velocity is 2 m/s and its acceleration is 2 m/s<sup>2</sup> in the forward direction?

A) 12 m

B) 14 m

C) 24 m

D) 48 m

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back





Time Remaining: 42/45 (Minutes)

Q.20

Test 1 Motion and Force

Physics Unit Wise

**If the initial speed of a projectile is doubled.**

- A) Its range will double
- B) Its range will be decreased by a factor of two
- C) Its range will quadruple
- D) Its range will decrease by a factor of four

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 42/45 (Minutes)

Q.21

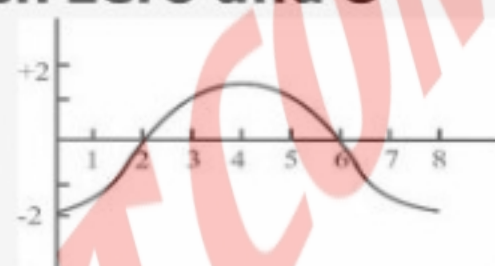
Test 1 Motion and Force

Physics Unit Wise

A force time graph for a linear motion is shown in figure, where the segments are circular, the linear momentum gained between zero and 8 second is

- A)  $-2\pi\text{Ns}$   
C)  $4\pi\text{Ns}$

- B)  $0\text{Ns}$   
D)  $-2\pi\text{Ns}$



STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

- ☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 42/45 (Minutes)

Q.22

Test 1 Motion and Force

Physics Unit Wise

**In straight line motion the**

- A. Acceleration is parallel (or antiparallel) to the velocity
- B. Acceleration is perpendicular to the velocity
- C. Acceleration is vertical, while the velocity can be in any direction
- D. Acceleration is vertical and the velocity is horizontal

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back





Time Remaining: 41/45 (Minutes)

Q.23

Test 1 Motion and Force

Physics Unit Wise

**In projectile motion the**

- A. Acceleration is parallel (or antiparallel) to the velocity
- B. Acceleration is perpendicular to the velocity
- C. Acceleration is vertical, while the velocity can be in any direction
- D. Acceleration is vertical and the velocity is horizontal

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 41/45 (Minutes)

Q.24

Test 1 Motion and Force

Physics Unit Wise

**A ball is in free fall. Its acceleration is:**

- A. Downward during both ascent and descent
- B. Downward during ascent and upward during descent
- C. Upward during both ascent and descent
- D. Upward during ascent and downward during descent

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back

# Physics

Time Remaining: 41/45 (Minutes)

Q.25

Test 1 Motion and Force

Physics Unit Wise

A baseball is thrown vertically into the air. The acceleration of the ball at its highest point is:

- A) Zero
- B)  $g$ , up
- C)  $g$ , down
- D)  $2g$ , down

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

- ☒ A
- ☐ B
- ☐ C
- ☐ D

Next

Back





Time Remaining: 41/45 (Minutes)

Q.26

Test 1 Motion and Force

Physics Unit Wise

**A newton is the force**

- A) Of gravity on a 1kg body
- B) That gives a 1kg body an acceleration of  $1\text{m/s}^2$
- C) Of gravity on a 1g body
- D) That gives a 1g body an acceleration of  $1\text{cm/s}^2$

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 41/45 (Minutes)

Q.27

Test 1 Motion and Force

Physics Unit Wise

A projectile is thrown at an angle of  $30^\circ$  with the horizontal has a range  $R_1$ , and attains a maximum height  $h_1$  – Another projectile thrown, with the same velocity at an angle  $30^\circ$  with the vertical has a range  $R_2$  and attains a maximum height  $h_2$ . The relation between  $R_1$  and  $R_2$  is

A)  $R_1 = \frac{R_2}{2}$

B)  $R_1 = R_2$

C)  $R_1 = 2R_2$

D)  $R_1 = 4R_2$

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back



Time Remaining: 40/45 (Minutes)

Q.28

Test 1 Motion and Force

Physics Unit Wise

Time of flight of projectile is

A)  $\frac{V_i \sin \theta}{g}$

B)  $\frac{V_i^2 \sin \theta}{g}$

C)  $\frac{2V_i \sin^2 \theta}{g}$

D)  $\frac{2V_i \sin \theta}{g}$

[Click Here if Image Doesn't Load](#)

Correct Answer:

☒ A ☐ B ☐ C ☐ D

Next

Back





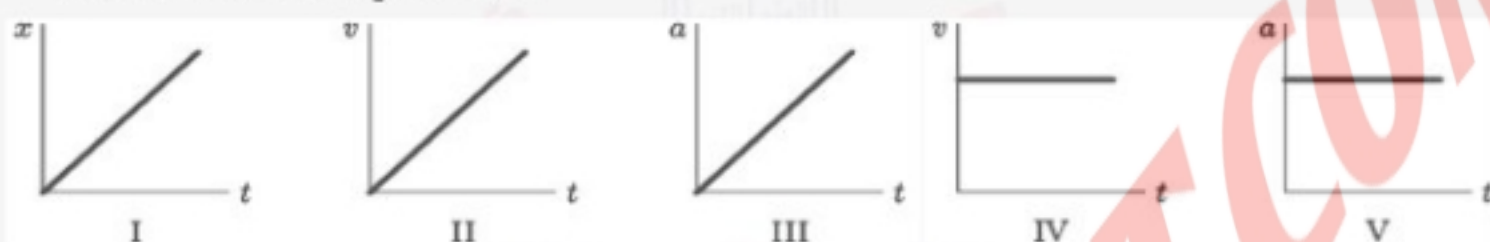
Time Remaining: 40/45 (Minutes)

Q.29

Test 1 Motion and Force

Physics Unit Wise

Consider the following five graphs (note the axes carefully). Which of these represents motion at constant speed?



A) IV only

B) I and IV only

C) IV and V only

D) I and II only

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Next

Back

## Physics

Time Remaining: 40/45 (Minutes)

Q.30

Test 1 Motion and Force

Physics Unit Wise

A racing car traveling with constant acceleration increases its speed from 10 m/s to 50 m/s over a distance of 60 m. How long does this take?

A) 2.0 s

B) 4.0 s

C) 5.0 s

D) 8.0 s

STAR INSTITUTE LAHORE

[Click Here if Image Doesn't Load](#)

Correct Answer:



A



B



C



D

Submit Quiz

Back



# Test No #01

## Motion And Force

Wednesday

28-7-2021

### Answer key

1 A	2 C	3 C	4 C	5 D	6 D	7 C
8 B	9 B	10 C	11 A	12 A	13 C	14 A
15 A	16 C	17 A	18 A	19 D	20 C	21 B
22 A	23 C	24 A	25 C	26 B	27 B	28 D
29 B	30 A					

### Discussion

MCQ #04

initial velocity = same  
So  $u_i = 0$

$$H = \frac{u_i^2 \sin^2 \theta}{g}$$

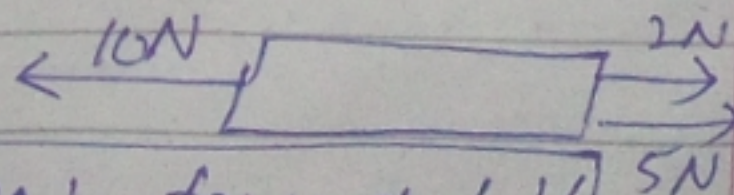
$$H \propto \sin^2 \theta$$

$$\frac{H_1}{H_2} = \frac{(\sin 30)^2}{(\sin 60)^2} = \frac{\left(\frac{1}{2}\right)^2}{\left(\frac{\sqrt{3}}{2}\right)^2} = \frac{\frac{1}{4}}{\frac{3}{4}} = \boxed{\frac{1}{3}}$$

MCQ #06

K.E of projectile can never be zero. It may be max or min.

MCQ No #07



Resultant =  $\boxed{3N \text{ toward left}}$   
Sum of all the forces =



12 distance  
Same

$$\frac{2u_1 u_2}{u_1 + u_2}$$

Shortcut  
No  
02

MCD # 10  
time same  
distance  
different

Shortcut

$$\frac{u_1 + u_2}{2}$$

$$\frac{30 + 50}{2}$$

$$= 40 \text{ kmh}$$

MCD NO 11  $[a=g]$  constant

MCD NO 12

$$\theta = 30^\circ$$

یہ کہ صرف  
اوپر تک جانے کا  
معلوم کرنا ہے

Total time -  $\frac{2 \text{ distance}}{g}$

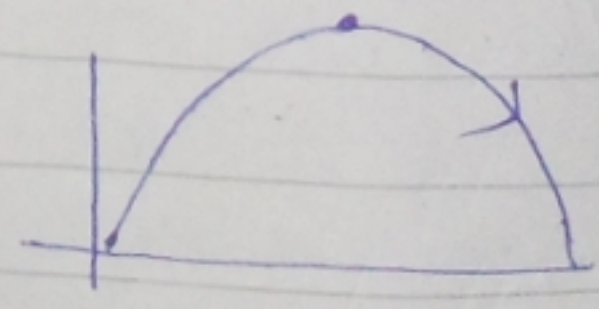
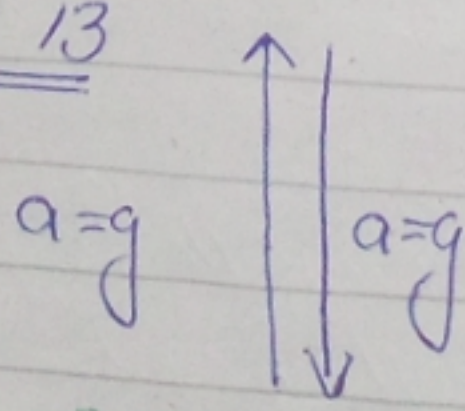
only at highest

$$T = \frac{u_1 \sin \theta}{g}$$

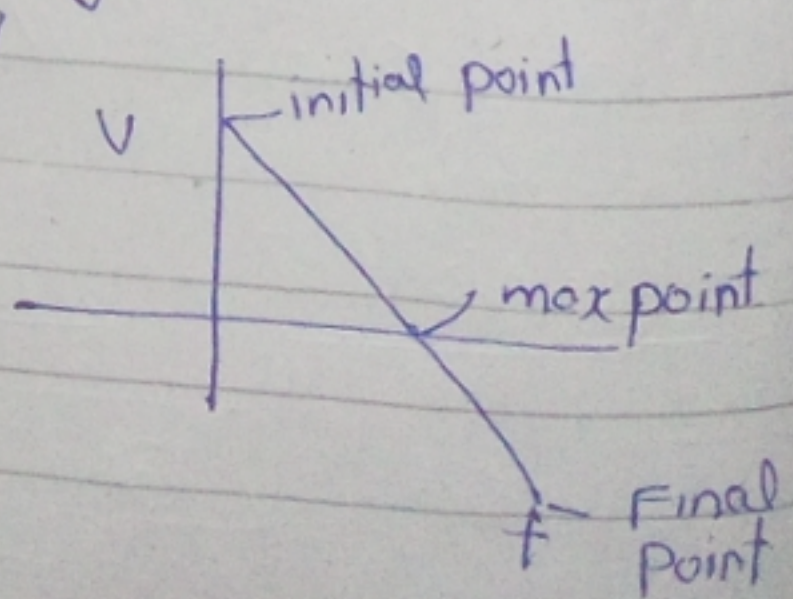
$$\frac{19.6 \times \frac{1}{2}}{2}$$

$$= 1 \text{ sec}$$

MCD # 13



اوپر جاتے ہوئے (u) زیادہ  
ہوئی Point High  
اور یہ سب نیچے کو آئے گی  
تو velocity ↑





MCD #19

$$S = u_1 t + \frac{1}{2} a t^2$$

$$2 \times 6 + \frac{1}{2} (2) 36$$

$$12 + 36 = 48m$$

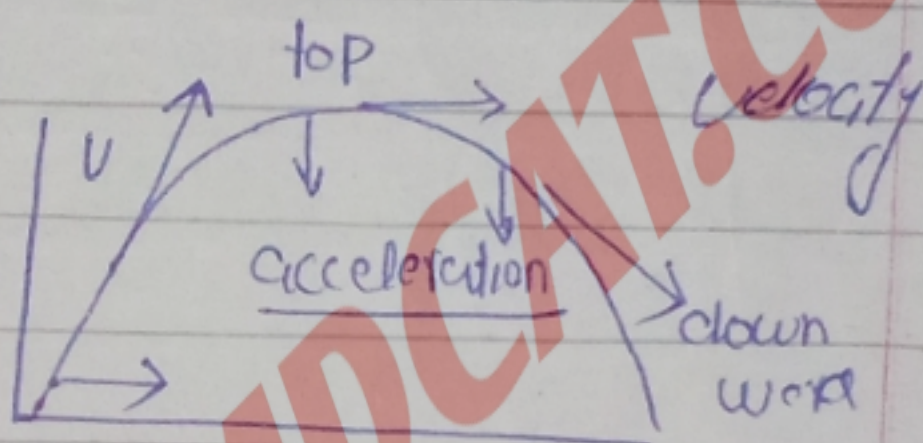
MCD #26

$$R = \frac{u_1^2 \sin 2\theta}{g}$$

MCD #21

MCD #23

acceleration  
 $a = g \downarrow$



MCD #27

Range will be equal

$$\theta_1 + \theta_2 = 90^\circ$$

(~~com~~ Angle in the x-axis)

MCD #30

$$2as = v_f^2 - v_i^2$$

$$a = \frac{v_f^2 - v_i^2}{2s} = \frac{2506 - 106}{2 \times 60}$$

$$a = 20 \text{ m/s}^2$$

$$v_f = u + at \quad t = \frac{v_f - u}{a}$$

$$\frac{50 - 10}{20} = \frac{40}{20} = 2s$$